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ETHANOBOTANICAL USES OF SOME AQUATIC MACROPHYTES FOUND IN YAVATMAL DISTRICT (M.S.) INDIA

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ABSTRACT

The present investigation concerns with the ethanobotanical uses of some aquatic macrophyte and its role in understanding socio-economic importance as well as uses of these aquatic macrophyte by tribal people of this area. The aim this investigation is that to study the species composition of aquatic macrophytes, their distribution in Yavatmal district. Thousands of plant species live in freshwater habitats around the world: along edges, on the surface, or at the bottom of shallow lakes and ponds; in temporarily flooded low areas and meadows; at seeps and springs (cienegas) in hill or montane regions; in flowing water of streams and rivers; rooted in waterlogged soils; and along any other natural or human-produced drainage system. The present study was carried out in various tehsil of Yavatmal district during January 2013 to May 2014. Eleven different species of aquatic macrophytes were recorded from the study area which include free floating macrophytes, submerged, rooted floating and emergent species of macrophytes. The free floating species *Eichornia crassipes* occurs throughout the year. While the submerged species *Vallisneria spiralis, Ceratophyllum demursum, Hydrilla verticillata* occur throughout the year. In the rooted floating category *Ipomoea aquatica* occurs throughout the year. Ethanobotanical importance as well as medicinal uses of the macrophytes has also been noted in the present paper.

KEYWORDS: Aquatic Macrophytes, Yavatmal District, Emergent Macrophte, Floating Macrophyte

INTRODUCTION

Human beings are dependent on plants. Every need of human being like food, cloth, fiber, fuels and most medicines derived from the plants. The use of plants by people is not new. Plant life has existed on earth for hundreds of millions of years (longer than human community). Today's modern world people neglect the indigenous knowledge; some people consider indigenous knowledge to be merely folklore and not based on scientific facts. However, folklore should not be dismissed or confused with a child's fairy tale. Folklore should be understood as part of the history of a culture, as passed down from generation to generation. Indigenous knowledge is both sacred and secular. Items from the environment are used for ceremonies and rituals and for artistic creations such as song, dance, and storytelling. Indigenous knowledge of ecosystems incorporates important methods of hunting, fishing and gathering in order to secure these natural resources and provide for the survival of the people.

Ehtnobotanists are highly interested in folklore-the anecdotes, mythologies, rituals. Regional folklore provides the keys to the character and meaning a plant has to local cultures. Traditional healers of all cultures follow the folklore approach to learning about plant use. Traditional healers are the people who can, without the use of advanced scientific equipment or formal schooling, identify plants, decide their uses and discover their curative powers. It is of great interest to the ethanobotanist to discover how the traditional healer learns to combine several plant species to achieve greater remedy

effectiveness and also how the healer controls potentially dangerous doses. There are some misconception about ethanobotany is that it is only the study of plant used by 'primitive' peoples in exotic locations and also ethanobotany applies to only nonindustrilized and nonurbanized societies of world. But the fact is that ethanobotany study human and plant interrelationship among all peoples. A variety of aquatic plants are also used in curative therapy in traditional communities. A good number of these ethno- botanic materials have been reported to yield compounds, which could be of use as modern drugs and pharmaceuticals Okojie (1998). *Pistia stratiodes* is used for ulcerative conditions of the mouth and tongue. Obot and Ayeni (1987) also report that *Pistia stratiodes* is used as part of a concoction for the treatment of 'flu. Some aquatic plants such as *Ceratophyllum dermersum* may also be used in the aquarium as ornamentals and as agents of aeration (Okojie, 1998).

METHODS AND MATERIAL

The study area i.e. Yavatmal district is situated in the eastern part of Maharashtra between north latitudes 19^0 28' and 20^0 48' and East longitudes 77^0 18' and 79^0 98'.This region is blessed with a good number of fresh water lakes and dams harbouring a great variety of aquatic macrophytes. Much work has been done on the phytosociology of different macrophytic species in different freshwater bodies of India and abroad (Billore and vyas, 1981, Biswas and Calder, 1984). In the present study monthly survey was done by quadrate method for collecting submerged aquatic macrophytes from January 2013 to May 2014. Information about ethanobotanical uses of aquatic macrophytes were collected from local peoples, traditional healers who are frequently using the aquatic macrophyte to cure various disease from long time. In each water body, the aquatic macrophytes were identified up to genus/species level.

RESULTS AND DISCUSSIONS

In present investigation total 11 aquatic macrophyte were studied. These aquatic macrophytes belonging to 10 families. Most these aquatic macrophytes are used as fodder for animals in rural areas and also some of them like *Typha angustata* used as mat weaving, stuff for pillow. The most notable function that aquatic plants serve as primary producers. However, aquatic macrophytes are also involved in ecosystem processes such as biomineralization, transpiration, sedimentation, elemental cycling, materials transformation, and release of biogenic trace gases into the atmosphere (Carpenter and Lodge, 1986). Macrophytes serve as a link between the sediment, water, and (sometimes) atmosphere in wetlands, lakes, and rivers. Table 1 shows the list of some aquatic macrophytes within Yavatmal district that are of both ecological and economicar values. Majorities are used as livestock fodder, which helps in reducing cost of feeding livestock, etc.

Many of these aquatic medicinal plants yield exceptionally promising compounds for use in modern drugs and pharmaceutical industries. *Nelumbo nucifera* leaf and petiole are cardio tonic and liver tonic. Powdered rhizome is used externally to cure piles while the decoction of the flower is narcotic and sedative. Some aquatic plants such as *Ceratophyllum dermersum, Hydrilla verticilita* may also be used in the aquarium as ornamentals and as agents of aeration (Okojie, 1998). Bubayero (1986) confirmed that between 75 and 80% of the Nigerian populace patronize the traditional healers that make use of a variety of plants including aquatic macrophytes.

CONCLUSIONS

Despite the general belief that most aquatic macrophytes pose obnoxious threat to the ecosystem, could still be used in various ways to make them environmentally friendly particularly if its utilization is integrated with mechanical

control which favours consistent but sustainable aquatic macrophyte control by the communities at low cost and for added economic benefits.

RECOMMENDATIONS

- Comprehensive chemistry of these macrophytes be studied with the objective of ascertaining the potency as regards their utilization in both orthodox and traditional medicine.
- Need for nutritional investigation be conducted into some of these macrophytes as regards their inorganic minerals contents and their subsequent use as supplements in animal diets.
- Centers for utilization of aquatic macrophytes be established in order to put more emphasis in research as it bothers on the positive and ecosystem friendly use of the plants.
- Extra effort be put in place to make objective comparison between the use of the animal manure and manure that are derivatives of aquatic macrophyte with the aim of establishing their positive effects on phytoplankton\zooplankton production in ponds.
- Need for training of personnel as regards to the techniques entails in conversion of aquatic plants to biogas and fuel as the prices of conventional household fuel goes up.
- The use of the macrophytes as supplement to conventional fertilizers (inorganic fertilizers) should be adequately studied as organic alternatives capable of eliminating or abating the deleterious impacts of the inorganic fertilizers on the environment.

Table 1: Socio-Economic/Importance of Some Aquatic Macrophytes within Yavatmal District

S.N.	Families	Botanical Name	Uses / Ailment
1	Araceae	*Pistia stratiodes L.*	Part of concoction to treat flu. Regular use of half cup of decoction of root is administered in eczema, cold and cough.
2	Ceratophyllaceae	*Ceratophyllum dermersum L.*	Aquarial material. Paste of leaf is externally applied in cases of scorpion. Decoction of leaf is used for 10 to 15 days to regulate biles secretion.
3	Convolvulaceae	*Ipotmoea aquatica Forsk.*	Livestock fodder, part of concoction to wash new baby. Decoction of leaf is used as blood purifier.
4	Polygonaceae	*Polygonum glabrum Wild*	Half cup decoction of whole plant is used twice daily in fever.
5	Nymphaeaceae	*Nelumbo nucifera Gaerth*	One table spoon of decoction of flower mixed with a glass of water in regularly used as cardio tonic and liver tonic. Powdered rhizome is used externally to cure piles.
6	Typhaceae	*Typha angustata Bory*	Mat weaving. Stuff for pillow. Spike ash is used for healing wounds. The pollen mixed with honey is applied to wounds and sores or taken internally for treating uterine bleeding.
7	Pontideriaceae	*Eichhornia crassipes (Mart.) Solms*	The plant is used as manure. Young leaves and petioles cooked and used as carotene rich vegetable. Flowers have antifungal activity. Used in skin disease.
8	Hydrochartaceae	*Hydrilla verticilita(L.) f Royle*	Decoction of leaf is used in the treatment of abscesses boil and wounds. Leaves are dried powdered and applied on cuts and wounds.
9	Hydrochartaceae	*Vallisneria natans L.*	Leaves are boiled sesame seeds and one cup or this preparation is used as appetizer.

Table 1: Contd.,

10	Lamnaceae	*Lemna minor L.*	Decoction of leaf is used for the treatment of cold. Application of paste of leaf is useful in skin disease.
11	Marsileaceae	*Marsilea quadrifolia L.*	Juice of leaf is taken four times a day in diarrhea.

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